## Amendment to the Claims

## 1-33. (Canceled)

- 34. (Previously Presented) A low resistance ITO thin film having a resistivity less than  $1 \times 10^{-4} \Omega$  cm, said film deposited on a single crystalline substrate having a crystal face selected from the group consisting of a YSZ single crystal (100) face, a YSZ single crystal (111) face, a 3C-SiC single crystal (100) face, a CaF<sub>2</sub> single crystal (100) face, a MgO single crystal (100) face, a 6H-SiC single crystal (0001) face and a ZnO (0001) face.
- 35. (Previously Presented) A low resistance ITO thin film according to claim 34, wherein Sn dopant activity defined as {carrier density (cm $^{-3}$ )/ Sn density in said ITO film (number of Sn / cm $^{3}$ )} is greater than about 80%.
- 36. (Previously Presented) A low resistance ITO thin film according to claim 34, wherein film mobility is greater than 39 cm<sup>2</sup>/Vs.
- 37. (Previously Presented) A low resistance ITO thin film having a resistivity less than about  $1 \times 10^{-4} \Omega$  cm deposited on a c-axis-oriented ZnO film provided on a crystalline substrate, said low resistance ITO thin film being deposited by epitaxial growth.
- 38. (Previously Presented) A low resistance ITO thin film according to claim 37, wherein Sn dopant activity defined as {carrier density (cm<sup>-3</sup>) / Sn density in said ITO film (number of Sn / cm<sup>3</sup>)} is greater than about 80%.

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(Previously Presented) A low resistance ITO thin film according to claim 39.

37, wherein mobility of said ITO thin film is greater than about 39 cm<sup>2</sup>/Vs.

40. (Previously Presented) A low resistance ITO thin film according to claim

34, wherein said ITO thin film has a pattern formed thereon.

(Previously Presented) A low resistance ITO thin film according to claim 41.

34, wherein said ITO thin film has a In<sub>2</sub>O<sub>3</sub> crystal structure of one of a C-rare earth type

and a corundum type.

42. (Previously Presented) A low resistance ITO thin film according to claim

34, wherein said ITO thin film is formed on said substrate which has a temperature

between about 500 and about 1000 °C by a pulsed laser deposition method.

43. (Previously Presented) A low resistance ITO thin film according to claim

34, wherein said ITO thin film is formed by one of a low-voltage sputtering, an oxygen

cluster beam deposition, a chemical vapor deposition, a metal organic chemical vapor

deposition - atomic layer deposition, and a molecule beam epitaxy.

44. (Previously Presented) A low resistance ITO thin film according to claim

37, wherein said crystalline substrate is provided to accept said c-axis-oriented ZnO film

crystal structure deposited thereon.

45. (Canceled)

46. (Previously Presented) A low resistance ITO thin film according to claim

37, wherein said single crystalline substrate is one of a YSZ single crystal substrate, a

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substrate on which a c-axis oriented ZnO thin film is formed, a sapphire substrate, a SiC single crystal substrate and a silicon single crystal substrate.

47-48. (Canceled)

49. (Previously Presented) A low resistance ITO thin film having a resistivity less than about  $1 \times 10^{-4} \Omega$  cm deposited on a c-axis oriented ZnO film provided on a glass substrate, said low resistance ITO thin film being deposited by epitaxial growth.